First Annual Report of the Biological and Chemical Defence Review Committee

(In May 1990 the Minister of National Defence established the Biological and Chemical Defence Review Committee (BCDRC) to review annually all aspects of the research, development and training programs in biological and chemical defence undertaken by DND)

December 1990

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INTRODUCTION

In July 1988 Mr. William H. Barton was commissioned by the Minister of National Defence to review the research, development and training activities in chemical and biological defence undertaken by the Department of National Defence (DND) to ensure that they were defensive in nature and conducted in a professional manner with no threat to public safety or the environment. Mr. Barton completed his assignment and submitted a comprehensive report to the Minister on 31 December 1988. The report was subsequently published and made public.

Among the several recommendations contained in the report, one advocated the establishment of an advisory committee of prominent, senior representatives of the Canadian scientific community tasked to review annually all aspects of DND's biological and chemical programs and to visit the various facilities. It was further recommended that this committee be associated with, and report to the Chief of the Defence Staff and Deputy Minister through the Defence Science Advisory Board (DSAB).

In May 1989, the Chairman DSAB was requested to have the Board address this issue and to recommend an implementation plan. The resultant proposal was approved and the action to create such a committee was initiated in the autumn of 1989. To ensure independence of advice, credibility and impartiality, the Chairman DSAB discussed the question of committee membership and selection with the President of The Royal Society of Canada. Based on these discussions and nominations by the Chemical Institute of Canada, the Canadian Federation of Biological Societies and the Canadian Society of Toxicology, three members of the Canadian scientific community were approached concerning membership on this select committee.

In May 1990 the Minister of National Defence established the Biological and Chemical Defence Review Committee (BCDRC) to review annually all aspects of the research, development and training programs in biological and chemical defence undertaken by DND and to submit an annual report on its findings (BCDRC Terms of Reference are at Annex A). We, the following, accepted the Minister's request to serve for an initial three year period:

Chairman	E.R.W. Neale	Calgary, Alberta late of Memorial University
Member	C.E. Holloway	York University
Member	G.L. Plaa	University of Montreal.

The Chairman DSAB appointed J.A. Cotter of Sidney, B.C. as Executive Officer of the Committee.

The first challenge confronting us was that of designing a program of work that would satisfy our need to become reasonably informed as to DND's roles, responsibilities and functioning and yet allow us to review the on-going biological and chemical defence program in its entirety. To achieve this understanding of a complex discipline it was decided that a three year evolving plan be implemented. Thus, we shall endeavour to acquire an informed overview of DND's biological and chemical program in the first year, building to a thoroughly competent, in-depth analysis of all aspects of DND's biological and chemical activities by the end of the third year.

COMMITTEE ACTIVITIES

To effect our mandate we visited, between 28 May and 28 September 1990, the following DND Establishments, including the associated laboratories, ranges and training facilities, and received briefings as enumerated below:

National Defence Headquarters with staff briefings from:

Chief Research and Development (CRAD)
Surgeon General
Director Nuclear Biological and Chemical Coordination

Canadian Forces Nuclear, Biological and Chemical (CFNBC) School with briefings on its responsibilities, resources and training

Canadian Forces Bases Cornwallis, Greenwood and Halifax with briefings from each on the biological and chemical training being conducted and facilities available

Defence Research Establishment Ottawa (DREO) with overview briefings on the Protective Sciences Division and the Chemical Protection Section including current and future programs

Defence Research Establishment Suffield (DRES) with overview briefings on the responsibilities and resources of DRES, the Threat to Canadian Forces (CF) personnel, the Defence Technologies Division, Defence Sciences Division, the Chemical/Biological Defence Section, the Biomedical Defence Section and Project Swiftsure including current and future programs

Defence and Civil Institute of Environmental Medicine (DCIEM) with overview briefings on the responsibilities and resources of DCIEM, the Biosciences Division and the Medical Life Support Division including current and future programs

In addition, while at DRES, the BCDRC held privileged and most frank discussions separately with the Joint Occupational Safety and Health Committees and representatives of the three involved Unions. Further, time was made available at DRES to allow any member or groups of members to approach us to discuss matters of concern. These three activities provided helpful insights into the program and morale at Suffield.

To enhance our historical perspective of Canada's biological and chemical ventures, an evening was spent with John Bryden discussing his recent book "Deadly Allies – Canada's Secret War 1937-1947". On the basis of his investigations, he provided a comprehensive overview of the roots of current public concerns about biological and chemical research and made useful suggestions for future committee activities.

As mandated, the BCDRC reviewed DND's 1990 Biological and Chemical Defence Research and Development Program and determined that it was indeed in accordance with current Canadian Government Policy.

IMPLEMENTATION OF BARTON REPORT RECOMMENDATIONS

The implementation of the recommendations contained in the Barton Report was examined in detail. The current status of each recommendation was ascertained to be:

GENERAL

1. **In the course of the annual program and budgetary process, the authorizing officer at each level be required to sign a certificate of compliance with Departmental policies.**

   Certificates of Compliance for 1990/1991 were reviewed and found to be in order.

2. **A senior Review Committee be established in association with DSAB.**

   We constitute such a Committee.

3. **"Second opinions" should be obtained from outside sources on some of the potentially controversial test programs.**

   We shall investigate methods whereby such second opinions could be routinely obtained from Canadian engineering and scientific communities.

4. **A document be prepared annually which would set out the nature of the research and development work under way, the number of people involved, and the allocation of funds.**

   The 1990 Review was published in August 1990.

5. **A layman's pamphlet be published which would help improve public understanding about Biological and Chemical Defence.**

   The pamphlet was published in August 1990.

6. **A DND directive on policies and procedures regarding the use of volunteers and animals be published.**

   DND Policy – Animal Use in R&D was issued on 15 June 1989.

   The directive on the use of volunteers is being drafted by the Surgeon-General. Interim guidelines were issued 11 June 1990.

DRES

1. **A procedure be established to ensure that the DRES Safety Manual is reviewed at prescribed regular intervals of not more than three years. Safety drills should also be conducted at prescribemd regular intervals.**

   The procedure has been established and implemented. Safety drills are being conducted as recommended.

2. **An automatic annual review and certification procedure be instituted to confirm that stocks of toxic agents are being kept to the minimum level necessary for the conduct of an efficient research and development program.**

   The annual inventory audit was completed in January 1990 and reviewed by the BCDRC in August 1990. We agreed that stocks were being maintained at a minimum level.

3. **The arrangements being implemented to improve security and access controls be expedited.**

   Completed.

4. **Pending the destruction of the excess agent stocks now stored in the Experimental Proving Ground, the adequacy of existing physical security arrangements be reviewed with a view to strengthening them.**

   Completed.

5. **The incinerator which is to be acquired for the program be considered for use in the destruction of other dangerous industrial chemicals, including PCBs.**

   The Alberta Government has essentially rendered this recommendation unimplementable as they have:

   a. restricted the future destruction of hazardous materials within Alberta to the Swan Hills Special Waste Treatment Facility; and

   b. imposed stringent restrictions on the moving of hazardous materials on provincial highways.

6. **The Experimental Proving Ground operation and maintenance be given "project" status within the CRAD program.**

   Implemented.

7. **The scope of the safety and environmental requirements governing outdoor testing at DRES be determined by the provisions of the Canadian Environmental Protection Act.**

   The Federal Minister of Environment has offered the assistance of his department in establishing guidelines for any chemical defence testing which might be considered in the future.

8. **A full environmental audit of DRES be commissioned as soon as possible and that it be repeated at regular intervals of, say, five years.**

   The first audit is being done on contract through Supply and Services Canada and should be completed in 1991.

DREO

1. **A regular annual review procedure be instituted at DREO to confirm for the record that stocks of chemical agents are kept to the minimum necessary for the research and development program.**

   The annual inventory audit was completed in January 1990 and reviewed by the BCDRC in September 1990. We agreed that stocks were being maintained at a minimum level.

2. **As part of the implementation of the Canadian Environmental Protection Act, an environmental audit of DREO be carried out at the first convenient opportunity, and at regular intervals thereafter.**

   The first audit is being done on contract through Supply and Services Canada and should be completed in 1991.

OBSERVATIONS

IMPRESSIONS OF PERSONNEL AND PROGRAMS

It was evident to us that the personnel associated with DND'S Biological and Chemical Defence programs consider the offensive use of Chemical/Biological weapons morally indefensible but all also unreservedly support the continuation of research and training that is designed to protect Canadians in the service of their country.

We were consistently impressed with the professionalism, maturity and enthusiasm demonstrated by those DND members who participated in the briefings and demonstrations presented to the BCDRC throughout the 1990 visits schedule.

The existing controls, particularly those applicable to funding, imposed by DND on biological and chemical projects and programs are considered adequate to assure conformance with current policy.

Within DND's research and development program the quality of science, the projects underway, the resultant publications and the level of safety awareness are of a high standard. CRAD personnel publish the results of their research in the open literature in a timely fashion, deliver papers at international scientific seminars and, in short, behave as do conscientious and dedicated research scientists in other agencies and in universities.

In order to build user confidence in the CF protective clothing, detection equipment and decontamination procedures, limited live agent training annually for selected personnel is considered essential.

"Project Swiftsure", the activity which is being undertaken at Canadian Forces Base Suffield to destroy safely all old stocks of chemical agents and hazardous materials stored on the DRES Experimental Proving Ground Range, should be completed in a most responsible manner within the foreseen timeframe.

A high level of confidence exists among the total work force at DRES that all scientific projects being undertaken are both essential to Canada and are with-in current policy constraints. In fact, several made the point that they would not work for DND if they felt that Canada's biological and chemical research had offensive implications.

To meet the latest Canadian government guidelines for "biological containment facilities" DRES will be required to upgrade the existing biological laboratory facilities. Until clarification is received as to acceptable interim standards some current research projects will, unfortunately, have to be held in abeyance.

The existence of the highly skilled Emergency Response Team at the CFNBC School, their roles, responsibilities and availability should be communicated to Canadians as part of the DND Public Relations program.

The achievements of DND's biological and chemical programs such as HI-6, the only single antidote effective against all known nerve agents and potentially useful in cases of mammalian poisoning by pesticides; an effective skin decontaminant lotion; and a range of superb protective equipment should be catalogued and made known more broadly in Canada.

SOME CONCERNS

What appears to be a relatively unsystematic rotation of senior instructors at the CFNBC School occasions some anxiety.

The lack of scientific backgrounds among the training staff at the CFNBC School was noticeable.

The time and effort dedicated to biological and chemical defensive training within the CF is extremely limited. They could be judged to be insufficient in light of the recently intensified threat. Further, the time allotted for the biological and chemical defensive training of recruits is considered to be inadequate if reasonable levels of assimilation and retention are to be achieved.

Too few CF personnel with duties as biological and chemical instructors have graduated from the CFNBC School.

A few minor technical errors in the instructional material given recruits at CFB Cornwallis were noted. (Suggested amendments have been forwarded separately to the Base Commander.)

With the current level of interest in the environment and the recent discovery of contaminated projectiles at Canadian Forces Base Borden, the practicality of searching Canada for all possible sources of historical contamination needs to be examined.

There appears to be a great deal of public misinformation circulating concerning DRES and its activities. An aura of secrecy prevails which tends to breed this misinformation in spite of the overt involvement of DRES personnel in local community events and associations.

OUR TENTATIVE CONCLUSIONS

The BCDRC found neither indications of deviousness within DND's biological and chemical program nor evidence to support the contention that direct offense-related activities were being conducted.

At this stage of our investigation, we are convinced that Canada must retain the capability to effect defensive research and development to permit military operations under the threat of biological and chemical weapons. We approve of the present emphasis on protective clothing, antidotes and salves, agent detection, collective protection and casualty treatment.

RECOMMENDATIONS

I. The flow of information within the Defence Research Laboratories between sections, management and staff might be improved – possibly through occasional informal meetings and discussions with senior managers.

II. Career management procedures should be more closely attuned to the needs of small but extremely important units such as the CFNBC School.

III. A higher than present percentage of the CFNBC School staff should have scientific or engineering backgrounds.

IV. Restricted live agent training should continue to be conducted annually at DRES for selected CF personnel.

V. CRAD should attempt to increase the number and scope of articles on biological and chemical related research for publication in open literature.

VI. CRAD should establish an accountability system to reflect:

a. all current biological and chemical research activities, both in-house and on contract, including budgets;

b. the publications and resultant presentations directly attributable to each activity or sub-activity; and

c. notes explaining why specific activities have not been publicized.

VII. An enhanced public relations program should be initiated to emphasize the many excellent achievements of the various research laboratories. Perhaps the Fiftieth Anniversary of DRES could be used to initiate regular open house events, occasional visitations by citizen groups or non-governmental scientific organizations and invitations to learned societies to hold chapter meetings at DRES.

ANNEX A
TERMS OF REFERENCE BIOLOGICAL AND CHEMICAL DEFENCE REVIEW COMMITTEE

BACKGROUND

1. The policy of the government of Canada is to press for a global, comprehensive and verifiable treaty to ban all chemical weapons. While the threat from such weapons remains, however, Canada has an obligation to ensure that members of the Canadian Forces (CF) have adequate training and equipment to protect themselves against exposure to chemical and biological agents.

2. On the other hand, the Canadian public has a right to be assured that Canada's policy of maintaining only a defensive capability in this field is fully respected at all times, and that any research, development and training activities udertaken by this country are professionally conducted and pose no threat to public safety or the environment.

TASK

3. The Biological and Chemical Defence Review Committee (BCDRC) is to review annually the research, development and training programs in biological and chemical defence undertaken by the Department of National Defence (DND).

EXECUTION

4. BCDRC will annually:

a. visit the major activity centres:

1) The Defence Research Establishment Ottawa (DREO);

2) The Defence Research Establishment Suffield (DRES); and

3) The Canadian Forces Nuclear, Biological and Chemical School (CFNBCS);

b. visit at least two other DND Establishments where biological and chemical training is conducted;

c. review the annual DND R&D Program as developed by the Chief of Research and Development (CRAD) and approved by the Defence Management Committee (DMC);

d. review the implementation of the recommendations made in the BARTON REPORT of 31 December 1988; and

e. submit a report of their findings to the Chairman, Defence Science Advisory Board (DSAB).

5. The Chairman DSAB will present the Report to the Chief of the Defence Staff and the Deputy Minister of National Defence.

6. DND is to respond to the Report to the BCDRC Chairperson with a copy to the Chairman, DSAB within 90 days of the presentation of the Report to DND.

COORDINATION

7. Assignment of responsibilities:

a. OPI: Chairman, DSAB;

b. Committee (to consist of a chairperson and two senior representatives of the Canadian scientific, juridical and industrial communities); to be appointed for a term of two/three years by DND on the recommendation of the Chairman DSAB; and

c. Conduct of tasking: all elements of DND and the CF are to assist the Committee as required by the Chairperson.

8. Support:

a. DSAB will assign an executive officer to the Committee;

b. the committee executive officer will attend to all liaison, travel, accommodation, coordination, administrative support matters and will prepare and publish, as directed by the Chairperson, the Committee's annual report;

c. technical support is to be available from whatever sources the Chairperson requires; and

d. access to all relevant information and personnel is to be given to the Committee.

ANNEX B

BIOGRAPHICAL NOTES ON COMMITTEE MEMBERS

Dr. E.R. Ward Neale, OC

Dr. E.R. Ward Neale, Chairman of the Committee, has a doctorate in geology from Yale University and, among other appointments and memberships, he is a Fellow of the Royal Society of Canada. Dr. Neale is retired and works as a consultant (geologist) in Calgary.

Dr. Clive E. Holloway

Dr. Clive E. Holloway is the Director of the Division of Natural Science at York University. Dr. Holloway received his doctorate in chemistry from the University of Western Ontario and, among numerous appointments and memberships, he is a member of the Chemical Institute of Canada and the Royal Institute of Chemistry.

Dr. Gabriel L. Plaa

Dr. Gabriel L. Plaa is a Professor in the Department of Pharmacology in the Faculty of Medicine and the Director of the Interuniversity Center for Research in Toxicology, University of Montreal. Dr. Plaa received his doctorate in toxicology from the University of California in San Francisco and, among his appointments and memberships, he is a member of the Canadian Society of Toxicology and the American Board of Toxicology.